






Fifth Grade Standards Progression 2012-13

Grade 5	Weeks 1-6	Weeks 7-12	Weeks 12-18	Weeks 19-24	Weeks 25-30	Weeks 31-36
<b>Write and interpret numerical expressions.</b>						
<b>5.OA.1-</b> Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	<ul style="list-style-type: none"> <li>I can use parentheses , brackets, or braces in numerical expressions and evaluate expressions with these symbols.</li> </ul>					
<b>5.OA.2-</b> Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. <b>For example, express the calculation "add 8 and 7, then multiply by 2" as <math>2 \times (8 + 7)</math>. Recognize that <math>3 \times (18932 + 921)</math> is three times as large as <math>18932 + 921</math>, without having to calculate the indicated sum or product.</b>	<ul style="list-style-type: none"> <li>I can write simple expressions to represent calculations.</li> <li>I can interpret expressions without evaluating them.</li> </ul>					
<b>Analyze patterns and relationships.</b>						
<b>5.OA.3-</b> Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.	<ul style="list-style-type: none"> <li>I can create two numerical patterns using two given rules.</li> <li>I can create</li> </ul>					


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	ordered pairs using terms from two patterns and graph the ordered pairs on a coordinate plane.					
<b>Understand the place value system.</b>						
<b>5.NBT.1-</b> Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left. 	<ul style="list-style-type: none"> <li>I can explain how the value of a digit in a multi-digit whole number relates to the value of the digits around it.</li> </ul>				<ul style="list-style-type: none"> <li>I can explain how the value of a digit in a decimal to thousandths relates to the value of the digits around it.</li> </ul>	
<b>5 NBT.2-</b> Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. 					<ul style="list-style-type: none"> <li>I can explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10.</li> </ul>	


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<p><b>5.NBT.3-</b> Read, write, and compare decimals to thousandths.</p> <p>a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., <math>347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)</math>.</p> <p>b. Compare two decimals to thousandths based on meanings of the digits in each place, using <math>&gt;</math>, <math>=</math>, and <math>&lt;</math> symbols to record the results of comparisons.</p> 					<ul style="list-style-type: none"> <li>I can read and write decimals to thousandths using base-ten numerals, number names, and expanded form.</li> <li>I can compare two decimals to thousandths based on the digits in each place using <math>&gt;</math>, <math>=</math>, and <math>&lt;</math>.</li> </ul>	
<p><b>5.NBT.4-</b> Use place value understanding to round decimals to any place.</p> 					<ul style="list-style-type: none"> <li>I can use place value understanding to round decimals to any place.</li> </ul>	
<b>Perform operations with multi-digit whole numbers and with decimals to hundredths.</b>						
<p><b>5.NBT.5-</b> Fluently multiply multi-digit whole numbers using the standard algorithm.</p> 	<ul style="list-style-type: none"> <li>I can multiply multi-digit whole numbers using the standard algorithm.</li> </ul>	<ul style="list-style-type: none"> <li>I can fluently multiply multi-digit whole numbers using the standard</li> </ul>				



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		algorithm.				
<p><b>5.NBT.6-</b> Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> 	<ul style="list-style-type: none"> <li>• I can divide a 4 digit by a 2 digit number using place value, the properties of operations, and/or the relationship between multiplication and division.</li> <li>• I can interpret the remainder of a division problem.</li> <li>• I can illustrate and explain division calculations using rectangular arrays, and/or area</li> </ul>	<p>I can explain division calculations using equations.</p>				


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	models.					
<p>5.NBT.7- Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p> 					<ul style="list-style-type: none"> <li>I can add, subtract, multiply, and divide decimals to hundredths using concrete models or drawing and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</li> <li>I can relate the strategies I use to add, subtract, multiply, and divide decimals to hundredths to a written method and explain my reasoning</li> </ul>	
<b>Use equivalent fractions as a strategy to add and subtract fractions.</b>						
<b>5.NF.1-Add and subtract fractions</b>			<ul style="list-style-type: none"> <li>I can add</li> </ul>			

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<p>with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.</p> 			<p>and subtract fractions (including mixed numbers) with unlike denominators by finding equivalent fractions with like denominators.</p>			
<p><b>5.NF.2-</b> Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.</p> 			<ul style="list-style-type: none"> <li>• I can use visual fraction models or equations to solve word problems involving addition and subtraction of fractions.</li> <li>• I can use benchmark fractions and number sense of</li> </ul>			


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			fractions to mentally estimate and assess the reasonable-ness of my answers.			
<b>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</b>						
<p><b>5.NF.3-</b> Interpret a fraction as division of the numerator by the denominator (<math>a/b = a \div b</math>). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.</p> 				<ul style="list-style-type: none"> <li>I can interpret a fraction as division of the numerator by the denominator.</li> <li>I can use fraction models or equations to solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.</li> </ul>		


<p><b>5.NF.4-</b> Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p> <p>a. Interpret the product <math>(a/b) \times q</math> as <math>a</math> parts of a partition of <math>q</math> into <math>b</math> equal parts; equivalently, as the result of a sequence of operations <math>a \times q \div b</math>. <i>For example, use a visual fraction model to show <math>(2/3) \times 4 = 8/3</math>, and create a story context for this equation. Do the same with <math>(2/3) \times (4/5) = 8/15</math>. (In general, <math>(a/b) \times (c/d) = ac/bd</math>.)</i></p> <p>b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.</p> 				<ul style="list-style-type: none"> <li>• I can compare the size of the product of two fractions to the product of two other fractions based upon the size of the unit fraction.</li> <li>• I can use a visual model to represent multiplication of a fraction or a whole number by a fraction.</li> <li>• I can create a story context for a situation involving multiplication of a fraction or a whole number by a fraction.</li> </ul>		
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				<ul style="list-style-type: none"> <li>I can represent fraction products as rectangular areas.</li> </ul>		
<p><b>5.NF.5-</b> Interpret multiplication as scaling (resizing), by:</p> <p>a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.</p> <p>b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence <math>a/b = (n \times a)/(n \times b)</math> to the effect of multiplying <math>a/b</math> by 1. </p>				<ul style="list-style-type: none"> <li>I can compare the size of the product to the size of one factor based on the size of the other factor without multiplying the factors.</li> <li>I can multiply a whole number by a fraction and compare the size of the product to the original whole number.</li> </ul>		
<p><b>5.NF.6-</b> Solve real world problems involving multiplication of fractions and mixed numbers,</p>				<ul style="list-style-type: none"> <li>I can use visual fraction</li> </ul>		



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e.g., by using visual fraction models or equations to represent the problem. 				models or equations to solve real world problems involving multiplication of fractions and mixed numbers.		
<p><b>5.NF.7-</b> Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.<sup>1</sup></p> <p>a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. <i>For example, create a story context for <math>(1/3) \div 4</math>, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that <math>(1/3) \div 4 = 1/12</math> because <math>(1/12) \times 4 = 1/3</math>.</i></p> <p>b. Interpret division of a whole number by a unit fraction, and compute such quotients. <i>For example, create a story context for <math>4 \div (1/5)</math>, and use a</i></p>				<ul style="list-style-type: none"> <li>I can divide a unit fraction by a non-zero whole number using a visual model and relate it as the inverse of multiplication.</li> <li>I can divide a whole number by a unit fraction using a visual model and relate it as the</li> </ul>		

<p><i>visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that <math>4 \div (1/5) = 20</math> because <math>20 \times (1/5) = 4</math>.</i></p> <p>c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. <i>For example, how much chocolate will each person get if 3 people share <math>1/2</math> lb of chocolate equally? How many <math>1/3</math>-cup servings are in 2 cups of raisins?</i></p> 				<p>inverse of multiplication.</p> <ul style="list-style-type: none"> <li>I can solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions.</li> </ul>		
<b>Convert like measurement units within a given measurement system.</b>						
<p><b>5.MD.1-</b> Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.</p> 					<ul style="list-style-type: none"> <li>I can convert among different-sized standard measurement units within the same system and solve multi-step real world problems.</li> </ul>	

Represent and interpret data						
<b>5.MD.2-</b> Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ). Use operations on fractions for this grade to solve problems involving information presented in line plots.			<ul style="list-style-type: none"> <li>I can make a line plot to display a data set of measurements in fractions of a unit (<math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{8}</math>).</li> <li>I can use operations to solve problems involving information presented in line plots which use fractions of a unit (<math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{8}</math>).</li> </ul>			
Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.						
<b>5.MD.3-</b> Recognize volume as an attribute of solid figures and understand concepts of volume measurement. <ul style="list-style-type: none"> <li>A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.</li> <li>A solid figure which can be packed without gaps or overlaps using <math>n</math> unit cubes is</li> </ul>		<ul style="list-style-type: none"> <li>I can use volume as one characteristic to describe a solid figure.</li> <li>I can explain different ways volume can</li> </ul>				

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<p>said to have a volume of <math>n</math> cubic units.</p> 		<p>be measured.</p> <ul style="list-style-type: none"> <li>• I can identify a unit cube and explain how it can be used to measure volume.</li> <li>• I can explain the relationship between the number of cubes it takes to fill a solid figure and the volume of that figure.</li> </ul>				
<p><b>5.MD.4-</b> Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.</p> 		<ul style="list-style-type: none"> <li>• I can measure volume in cubic in, cubic cm, cubic ft, and improvised units by counting cubes.</li> </ul>				
<p><b>5.MD.5-</b> Relate volume to the</p>		<ul style="list-style-type: none"> <li>• I can explain</li> </ul>				

<p>operations of multiplication and addition and solve real world and mathematical problems involving volume.</p> <p>a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height.</p> 		<p>how volume relates to multiplication and addition.</p> <ul style="list-style-type: none"> <li>• I can solve real world problems involving volume.</li> <li>• I can explain why finding the volume by packing a figure with unit cubes is the same as the volume found by multiplying the edges lengths or by multiplying the height by the area of the base.</li> <li>• I can find the volume of a right rectangular prism by packing it</li> </ul>				
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		<p>with cubes.</p> <ul style="list-style-type: none"> <li>• I can apply the formulas <math>V = l \times w \times h</math> and <math>V = B \times h</math> to find the volume of a right rectangular prism in the context of real world problems.</li> <li>• I can solve real world problems by decomposing a solid figure into two right rectangular prisms and adding their volumes together.</li> </ul>				
<b>Graph points on the coordinate plane to solve real-world and mathematical problems</b>						
<p><b>5.G.1-</b> Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given</p>	<ul style="list-style-type: none"> <li>• I can define a coordinate system and its component</li> </ul>					

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<p>point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).</p> 	<p>s (origin, axes, ordered pairs/coordinates)</p> <ul style="list-style-type: none"> <li>I can locate and describe how to locate an ordered pair (x- and y-coordinate s) using the x- and y-axes.</li> </ul>					
<p><b>5.G.2-</b> Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.</p> 						<ul style="list-style-type: none"> <li>I can represent mathematical problems by graphing points in the first quadrant and interpreting coordinate values of points in real world contexts.</li> </ul>
<b>Classify two-dimensional figures into categories based on their properties.</b>						
<p><b>5.G.3-</b> Understand that attributes belonging to a category of two-</p>						<ul style="list-style-type: none"> <li>I can recognize that</li> </ul>



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dimensional figures also belong to all subcategories of that category						if an attribute of a two-dimensional figure belongs to a category it also belongs to all subcategories.
<b>5.G.4-</b> Classify two-dimensional figures in a hierarchy based on properties.						<ul style="list-style-type: none"> <li>I can classify two-dimensional figures in a hierarchy based on properties.</li> </ul>